GANG MEMBERSHIP AS A TURNING POINT IN THE LIFE COURSE*

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Gang-involved youth are disproportionately involved in criminal behavior, especially violence. The processes accounting for this enhanced illegal activity, however, remain speculative. Employing a life-course perspective, we propose that gang membership can be conceptualized as a turning point in the lives of youth and is thus associated with changes in emotions, attitudes, and routine activities, which, in turn, increase illegal activity. Using prospective data from a multisite sample of more than 1,400 youth, the findings suggest that the onset of gang membership is associated with a substantial change in emotions, attitudes, and social controls conducive to delinquency and partially mediate the impact of gang membership on delinquent activity. Desistance from gangs, however, was not associated with similar systematic changes in these constructs, including delinquent involvement.

Perhaps no social group is more criminogenic than the youth gang. In fact, the disproportionate involvement in delinquency and violence by active

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gang members is considered to be "one of the most robust and consistent observations in criminological research" (Thornberry, 1998: 147). In reviewing extant research on the relationship between gangs and delinquency, the following important findings are prominently discussed (Esbensen and Huizinga, 1993; Gordon et al., 2004; Howell, 2009; Thornberry et al., 2003): 1) Youth gang members are disproportionately involved in all adolescent offending, especially serious and violent crimes; 2) youths have higher rates of offending during active gang membership than they do either before or after gang involvement; and 3) gang membership affects delinquency above and beyond the effect of peer delinquency. That is, "there is something *unique* about gang membership itself that increases youths' participation in serious and violent crime" (Egley et al., 2006: 224, italics added). Unfortunately, documentation of the *unique* mechanisms through which gang membership elicits such marked increases in delinquent involvement is lacking. As Thornberry et al. (2003: 3) stated, "Although we know that gang members are heavily involved in delinquency, especially serious and violent delinquency, we know much less about the extent to which gang membership plays a causal role in eliciting this behavior."

In the current study, we conceptualize gang involvement as an acute turning point in the lives of adolescents and use a life-course theoretical framework to account for the impact of gang membership on delinquent involvement. Using three waves of longitudinal panel data from more than 1,400 youth from across the United States, we examine the following research questions:

1. What is the effect of gang involvement on delinquency, controlling for potential selection effects?
2. Is the onset of and desistance from gang involvement related to changes in levels of informal social control consistent with the concept of a "turning point" as described by Sampson and Laub (2005; see also Sampson, Laub, and Wimer, 2006)?
3. Do factors associated with the turning point framework (Sampson and Laub, 2005) mediate the effect of gang membership on self-reported delinquency?

The availability of panel data allows for the use of counterfactual methods of analysis, using propensity score weighting, to help eliminate potential confounding effects related to the self-selection of individuals into and out of gang groups. This is especially fruitful in the current analysis, as many potential confounders of gang membership (i.e., sources of selection) also are hypothesized to mediate its impact on delinquency. We also discuss the implications of using Sampson and Laub's (2005) turning point framework for explaining the role of gang involvement on delinquency before detailing specific hypotheses related to the current study.

GANGS AND DELINQUENCY

Youth gangs have drawn a great deal of attention from scholars interested in juvenile delinquency, and for good reason. Although delinquency by its very nature is primarily a group phenomenon, youth gang members account for a disproportionate amount of serious and violent crime. Unfortunately, only a handful of studies have information regarding their subjects either before or after gang involvement. Consequently, "the general literature on street gangs often fails to highlight life-course development thereby limiting our understanding of both the antecedents and the consequences of gang membership" (Thornberry et al., 2003: 4). To date, researchers cannot pinpoint the underlying causal mechanisms driving this apparent criminogenic process, although three theoretical models have been proposed.

SELECTION, FACILITATION, OR ENHANCEMENT?

The three general theoretical frameworks proposed to explain the impact of gang membership on delinquent involvement are referred to as the selection, facilitation, and enhancement models (Thornberry et al., 1993). The *selection* model is consistent with theories that explain criminal behavior as the product of relatively stable differences in criminal propensity between individuals (Glueck and Glueck, 1950; Gottfredson and Hirschi, 1990; Hirschi, 1969). According to this view, the association between gang membership and delinquency is spurious, as a common set of factors explain both delinquency and gang involvement.

The *facilitation* model is consistent with social learning and opportunity perspectives, whereby gang membership influences attitudes, norms, and routine activities associated with delinquent behavior, which in turn increases individual criminal involvement. In this model, gang membership is afforded a causal role in shaping delinquent behavior both through a learning process similar to the one described by Akers (1998) as well as by influencing and delimiting opportunities for delinquent and prosocial behavior.

Finally, the *enhancement* model blends the selection and facilitation models and suggests that gang members are more antisocial than nongang youth even before gang involvement but that the gang context exacerbates these differences (Thornberry et al., 1993; Thornberry et al., 2003). As Thornberry et al. (2003: 186) stated, "The young men and women who join gangs have multiple deficits in many developmental domains and being a member of a street gang further impedes their prosocial development." To date, findings consistent with the enhancement model have been reported in American panel studies (Battin et al., 1998; Esbensen and Huizinga, 1993; Gordon et al., 2004; Peterson, Taylor, and Esbensen, 2004; Thornberry

et al., 2003) as well as in Norwegian (Bendixen, Endresen, and Olweus, 2006) and Canadian samples (Gatti et al., 2005).

One particularly intriguing aspect of the enhancement model is the substantial body of literature that has documented the rather transient nature of gang involvement, with most youth gang careers lasting 1 year or less (Esbensen and Huizinga, 1993; Hill, Lui, and Hawkins, 2004; Peterson, Taylor, and Esbensen, 2004; Thornberry et al., 2003). Given the fleeting nature of gang membership, coupled with the impact such associations have on rates of delinquent involvement, research on the process through which gang membership impacts delinquency is necessary. In line with the work of Thornberry et al. (2003), the onset of and desistance from gang involvement can be perceived as potential turning points in the lives of adolescents.

GANG ONSET AND DESISTANCE AS TURNING POINTS

From a life-course perspective, the onset of and desistance from gang involvement can be considered critical short-term transitions that potentially can redirect long-term trajectories (Elder, 1985; Thornberry et al., 2003). Sampson and Laub (2005) provided the rationale for four distinct mechanisms through which turning points can change behavior and possibly redirect long-term patterns of criminal behavior. It is important, therefore, to determine the applicability of these general mechanisms to the gang context.

A central tenet of Sampson and Laub's (1993: 15, 2005) life-course theory of crime and delinquency is that "crime is more likely to occur when an individual's bond to society is attenuated," which is consistent with more traditional social-control theories (e.g., Hirschi, 1969). As Thrasher (1927: 230–1) observed many years ago, "[t]he gang boy's conception of his role is more vivid with reference to his gang than to other social groups. Since he lives largely in the present, he conceives of the part he is playing in life as being in the gang; his status in other groups is unimportant to him, for the gang is his social world." In this way, periods of active gang involvement likely are associated with a weakening of one's bond to conventional society. The importance of the attachment to the gang, and the delinquent peers therein, can lead to the "knifing off" (Moffitt, 1993) of previously held prosocial attachments such as those to conventional peers, school, and parents, which are robust correlates of delinquency.

The attenuation of bonds to prosocial others is important because of the effect such ties have on conventional beliefs. That is, because "[t]he essence of internalization of norms, conscience, or super-ego thus lies in

the attachment of the individual to others," (Hirschi, 2006: 221) one should expect a diminution of prosocial beliefs as youth join gangs. However, to the extent that leaving the gang is associated with the resurrection of attachments to conventional others, we would expect more investment in these same prosocial values.

Another component of turning points, more generally, involves social interactions that provide supervision and monitoring as well as "opportunities for investment in new relationships" (Sampson and Laub, 2005: 34). Research suggests that investment in the gang is reinforced through both implicit and explicit expectations for commitment and loyalty to the group. Commitment and loyalty to the gang often is reinforced through initiation rituals (e.g., getting "beat in") (Decker and Van Winkle, 1996) and frequent use of gang signs and symbols (Felson, 2006). Furthermore, the social status of gang-involved youth often is elevated based on the willingness to be involved in dangerous activities for the gang's benefit, including confronting rival gang members (Miller and Decker, 2001). Commitment to one's gang suggests that youth are willing to disregard the negative consequences (e.g., incarceration and physical injury) of their involvement for the sake of the group.

Third, turning points often are associated with a change in routine activities, especially as they involve unsupervised socializing (Osgood et al., 1996) and interaction with delinquent peers (Warr, 2002). Although adolescence is a period during which most youths spend more time away from the watchful eyes and ears of parents and other authority figures (Warr, 2002), involvement in a gang exacerbates this situation, exposing these individuals to high-risk situations including social forums where alcohol, drugs, and delinquent peers, such as rival gang members, are present (Rosenfeld, Bray, and Egley, 1999; Taylor et al., 2007; Thornberry et al., 2003). For instance, Taylor et al. (2007) found that gang-involved youth were over three times more likely than nongang youth to report associating with peers where drugs and alcohol were available.

A primary criticism of Sampson and Laub's (1993) life-course theory of informal social control is that it failed to capture the role of human agency adequately, including the subjective elements of identity, perception, and decision making in producing stability and change in deviant behavior (Giordano, Cernkovich, and Rudolph, 2002; Giordano, Schroeder, and Cernkovich, 2007; Maruna, 2001). That is, Sampson and Laub (1993), specifically, and control theorists, more generally, have been criticized for their focus on the "change agent, while the actor is depicted as moving from adolescence to adulthood virtually unchanged, but for the good fortune of experiencing one or more of these events" (Giordano, Schroeder, and Cernkovich, 2007: 1606). In refining their life-course theory, Laub and Sampson (2003; see also Sampson and Laub, 2005) more clearly articulated

the role of subjective factors related to turning points, especially the malleability of identity, perception, and decision making that can result from changes in social structures while making explicit that the experience of any particular transition event or turning point is "mediated by perceptions and human decision making" (Sampson and Laub, 2005: 37).[1]

As has been highlighted by Giordano, Cernkovich, and Rudolph (2002; see also Giordano, Schroeder, and Cernkovich, 2007), as well as in Sampson and Laub's (2005) more recent work, transition events can lead to changes in cognitive and emotional self-concepts. For example, Katz's (1988) discussion of the impact of gang membership, or what he termed "street elites," on adolescent identities, highlights how such environments can increase involvement in acts of crime and violence, as those involved in such groups are expected to take on both a domineering (i.e., "elitist") and a violent (i.e., mean or "badass") posture to fulfill the image of the gang properly. Thus, "[o]ne who adopts the adolescent ghetto posture of an elite who wields the power of terror, without backing it with material violence, risks humiliation" (Katz, 1988: 129).

A particularly robust correlate of criminal offending across the life course, which evinced effects independent of contemporaneous social bonds or previous offending, according to Giordano, Schroeder, and Cernkovich (2007), is what they termed an "anger identity." According to this view, through a process of role taking and identification, individuals come to view themselves as easily agitated and quick to resort to violence. This identity, although originally impacted through early childhood interaction with parents, can change if individuals reevaluate themselves as they take on new roles and thus view themselves through the lens of a restructured generalized other (Mead, 1934).

What becomes clear, therefore, is that the decision to become involved with a gang is likely influenced by preexisting antisocial preferences and "actions" (i.e., both thoughts and behaviors [Laub and Sampson, 2003: 282]), but that experiences in the group can intensify deviant self-concepts and thus redirect criminal trajectories. Gang-induced criminality, in this way, is driven by more than a weakening of social bonds; the social experience of the gang also can lead to a reevaluation, or enhancement, of deviant self-concepts.

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1.   Giordano, Schroeder, and Cernkovich (2007) did not limit their focus on changes in cognitive and emotional self-concepts to particular turning points, as they argued that such changes do not necessarily need to be tied to specific life events. The well-documented association between gang involvement and delinquency, however, makes this particular life event a likely catalyst for self-evaluation and possible change in self-concepts for adolescents.

CURRENT STUDY

Decades of research suggest that gang membership is associated with a substantial increase in criminal involvement, which is consistent with Thornberry et al.'s (2003) enhancement framework (for a review, see Krohn and Thornberry, 2008). Recent evidence, however, suggests that selection effects (i.e., the self-selection of individuals with a high propensity for crime into gangs) play a non-negligible role in gang membership (DeLisi et al., 2009; Haviland, Nagin, and Rosenbaum, 2007) and thus need to be controlled when assessing the magnitude of the effect of gang membership on criminal and delinquent behavior. Even if extant research on the causal influence of gangs on delinquency remains robust after controlling for selection effects, as Haviland, Nagin, and Rosenbaum (2007) demonstrated, far less is known about how or why these associations produce behavioral change. The current study attempts to fill this void in the literature by first assessing the influence of gang membership on delinquency through examination of the direct impact of the onset of and desistance from gang involvement on criminal behavior using propensity score models (Rosenbaum and Rubin, 1983). By focusing first on the direct effect of gang membership on involvement in crime and delinquency using a counterfactual approach, we can identify more confidently whether the effect of gang involvement is truly causal.

To understand better the mechanisms through which gang membership produces behavioral change, we conceptualized gang onset and desistance as turning points in the lives of adolescents (Laub and Sampson, 2003; Thornberry et al., 2003). As such, we examined the impact of gang membership on the four elements that Sampson and Laub (2005: 17–8) highlighted as important for turning points to produce behavioral change. To do so, we operationalized each of the four important elements of Sampson and Laub's (2005) discussion of turning points, which are described subsequently.

To determine whether the onset of gang involvement is associated with a "knifing off" of prosocial attachments, we examined the impact of onset of and desistance from gang membership on youths' attachment to school and prosocial (i.e., conventional) peers. If involvement in gangs is consistent with a turning point, then we would expect that the onset of gang membership would lead to a reduced commitment to school and to fewer associations with conventional peers. However, if desistance from gang involvement is akin to a turning point, then we would expect an increase in both of these constructs.

Related to this notion of attachment, and because one's conscience is closely tied to prosocial attachments (Hirschi, 2006), we examined the effect of gang joining on two scales measuring conventional beliefs: anticipated

guilt for involvement in delinquent acts and the acceptability of the use of violence. The social origin of guilt means that, as youth move into more prodelinquent social environments such as gangs, their level of anticipated guilt for committing acts of violence likely will diminish. In Klein's (1971: 85) study of gang youth, for example, he noted that "[t]he lack of restraint in the expression of hostility, greed, and status needs—restraint ordinarily present in the form of guilt, or anticipation of negative consequences—makes one wary of pushing these boys too far." Klein (1971: 89) also suggested that gang members tend to justify involvement in violent altercations by declaring that their actions were only defensive and would not happen otherwise if not for the actions of others (see also Decker, 1996; and Decker and Van Winkle, 1996). Thus, we hypothesize that as youth enter a gang, they will be more accepting of violent behaviors, whereas when they desist from such involvement, their attitudes will become more conventional.

Next, because turning points are said to change patterns of supervision and provide opportunities for investment in new relationships, we examine the influence of gang onset and desistance on parental monitoring and commitment to antisocial peers. That is, as involvement in gangs draws youth away from the home for longer periods of time, we expect that parents will be less likely to monitor their child's behavior. Also, given that gang members often are judged based on their willingness to engage in behaviors that are potentially dangerous, one might expect that as youth become involved in gangs, their commitment to negative peers will increase. After their tenure in the gang is over, however, we would expect such commitment to wane.

Consistent with Sampson and Laub's (2005) prediction that turning points change and structure routine activities, we examine the influence of the onset of and desistance from gang involvement on unstructured socializing (Osgood et al., 1996) and on associating with delinquent peers (Warr, 2002), as these factors are robust correlates of delinquent involvement. Furthermore, prior research on the association between gang membership and routine activities suggests that gang involvement influences the amount of time youth spend in unsupervised and risky locations (Rosenfeld, Bray, and Egley, 1999; Taylor et al., 2007).

Finally, because turning points can provide an opportunity for self-reflection and a change in identity, we examine the influence of gang membership on individual anger identity. The potential for violent conflict can be considered the sine qua non of gangs and gang members. As Felson (2006) noted, individuals in street gangs often go to great lengths to intimidate those around them with signs and signals that convey a penchant for violence. Klein (1971: 85) also noted the lack of restraint found in many gang members, suggesting that "[a]ggression, verbal or physical, is a coping mechanism that received constant reinforcement within the gang."

Coupled with the work of Giordano, Schroeder, and Cernkovich (2007), who found that an angry self-concept was a strong correlate of criminal involvement among their panel of serious juvenile offenders, we expect that gang involvement in adolescence leads to an increase in members' presentation of self as particularly volatile, which subsequently leads to involvement in more acts of crime and violence.

DATA

The data used in this study are part of an evaluation of a school-based, law-related education program. As such, a purposive sample of schools was selected for inclusion in the evaluation; only schools offering the program were eligible to participate. The following summarizes our efforts to select study sites:

1. More than 250 schools were identified as offering the program at one point in time and, thus, were contacted to determine the current implementation status.
2. Eighteen schools met the evaluation criteria (i.e., confirmation that the program actually was being taught in its entirety, teaching of a sufficient number of classes to allow for matching of treatment and comparison groups while also being cost effective in terms of travel to the school for data collection, a willingness to withhold the program from some classes, and agreement to adhere to the evaluation design).
3. Three schools declined the opportunity to participate.
4. Fifteen schools in nine cities in four states agreed to the evaluation design and participated in the outcome evaluation.

The selection of schools was purposive, and the final sample of 15 schools (9 in Arizona, 1 in New Mexico, 2 in Massachusetts, and 3 in South Carolina) reflects the fact that program adoption was more pronounced in Arizona. Classrooms were selected based on the grade in which the program was taught (ranging from sixth to ninth grade). Random assignment was not possible, as only some teachers were trained to teach the program. Classrooms were matched by grade and subject, such that if the curriculum were taught in two sixth-grade social-studies classes, then the comparison classrooms were the remaining grade-level social-studies classes that did not receive the program. In total, 48 classrooms received the curriculum with 49 comparison classrooms.[2]

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2. Although the potential existed for the curriculum under evaluation to effect study results, process evaluation results suggest that this is an unlikely scenario. A process evaluation concluded that the program was not taught with sufficient fidelity to assess program impact (Esbensen, 2009; Melde, Esbensen, and Tusinski, 2006).

All students in the selected classrooms ($N = 2,353$) were asked to partic-
ipate in the evaluation. Because of the nature of the study, active parental
consent was required before students could participate in the evaluation.
Consent letters were sent home with students and collected by teachers.
Our collaborative efforts with the teachers resulted in a 72 percent active
consent rate ($n = 1,686$); 12 percent of parents refused their child's par-
ticipation ($n = 290$), and 16 percent of students failed to return consent
forms ($n = 377$). Because our analyses include two waves of data in any
one model (three waves of data total), individuals had to participate in
multiple waves of data collection to be included in the following analyses.
Retention rates for the three waves of data collection were well within
acceptable standards (96 percent, 89 percent, and 72 percent, respectively),
although the wave III data collection was impacted negatively by the fact
that all students at one school ($n = 222$ representing 13 percent of the
active consent sample) were lost when they transferred to a different school
district that did not allow access to the students. Consistent with prior panel
studies (Esbensen et al., 1999; Thornberry, Bjerregaard, and Miles, 1993),
attrition analyses found that those youth who dropped out of the study
were more delinquent than those who remained. Importantly, gang mem-
bership was not significantly associated with attrition across waves of data
collection.

The students participating in the evaluation resemble all students in their
schools; that is, the sample demographics are similar to the school-level
demographics. In fact, in several instances, the students represent all or
most students at grade level. The sample, however, is not representative
of students across the nation, as schools were selected purposively to meet
the needs of the program evaluation.

Pretest data were collected before the delivery of the evaluated curricu-
lum during the 2004–2005 school year, and posttests were administered
directly after the completion of the program—approximately 6 months
after the pretest. Wave III data were collected approximately 6 months
after the posttest—1 year after the pretest. All waves of survey data were
collected using group-administered, self-report methods, in which subjects
answered questions individually as they were read out loud by members of
the research team. The approximate time needed to complete the survey
was 40–45 minutes. Unless noted otherwise, scales used in this study were
derived from the Denver Youth Survey (Huizinga, Esbensen, and Weiher,
1991) and represent the mean score across items.

Outcome analyses of the three waves of data revealed no statistically significant
differences between the two groups.

MEASURES

GANG MEMBERSHIP

Gang membership was measured through a single-item, self-report measure. That is, survey participants were asked, "Do you consider your group of friends to be a gang?" This question is consistent with the work of Junger-Tas et al. (2010) on the international self-reported delinquency study. Those responding "yes" were coded 1, and those responding "no" received a 0. Although some debate persists as to the appropriate manner in which to measure gang membership, research has demonstrated that self-report methods are robust indicators of gang involvement (Esbensen et al., 2001; Thornberry et al., 2003).[3] In total, 181 (11 percent) respondents indicated involvement with a youth gang during the first two waves of data collection (see table 1).[4] Similar to previous research that suggested that gang membership is a rather transient state, with the average length of gang membership lasting 1 year or less (Esbensen and Huizinga, 1993; Peterson, Taylor, and Esbensen, 2004; Thornberry et al., 2003), several respondents in the sample reported both entering and exiting a gang group during the 1-year study. For instance, 48 respondents reported gang involvement at time 1 but not at time 2, whereas 57 respondents reported gang involvement across the first two waves of data collection (see table 1). Seventy-six respondents reported gang involvement for the first time at time 2, whereas 29 individuals reported onset of gang membership at time 3. Consistent with past research on the transient nature of gang involvement, only 29 respondents reported gang involvement at all three time periods.

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3. The operationalization of gang membership as belonging to a group of friends who consider themselves to be a gang leaves open the possibility that some youth are merely gang associates and do not consider themselves to be gang members. Curry, Decker, and Egley (2002) examined this issue and found that gang associates were more delinquent than nongang youth but were less delinquent than self-identified gang members. It is possible that our measure includes youth in this position.

4. This prevalence rate is lower than that reported in several surveys of high-risk youths but comparable with that reported in an 11-city school survey. Esbensen and Huizinga (1993) reported that 15.0 percent of their high-risk, community-based sample of Denver youths was gang affiliated, and Thornberry et al. (2003) reported that 30.9 percent of their school-based, high-risk sample of Rochester youths was gang affiliated. Both of these figures, however, are based on prevalence over a 5-year study period. In an 11-city, cross-sectional study of eighth graders in public middle schools, Esbensen et al. (2010) reported an overall current gang member prevalence rate of 9.1 percent.

Table 1. Comparison of Study Variables by Gang Membership Status

Variables	Post Hoc Tests[a]	Total Sample (N = 1,673)	Gang Status Comparison			
			Nongang (n = 1,492)	Only Gang at T1 (n = 48)	Gang Onset at T2 (n = 76)	Gang at T1 and T2 (n = 57)
Male		46%	45%	63%	54%	56%
Female		54%	55%	38%	46%	44%
White	c	32%	33%	21%	19%	16%
Black	b	12%	10%	10%	21%	18%
Hispanic		42%	42%	50%	47%	37%
Other	c, f	14%	14%	19%	13%	30%
Age (T1)		12.23 (.97)	12.22 (.97)	12.21 (.93)	12.51 (1.01)	12.19 (.92)
Delinquency T1	a, b, c, d, e, f	1.46 (3.14)	1.13 (2.45)	4.08 (5.64)	2.45 (4.01)	6.30 (7.00)
Delinquency T2	a, b, c, d, e, f	1.83 (3.68)	1.24 (2.33)*	3.21 (4.61)†	5.84 (6.99)*	9.09 (8.21)*
Delinquency T3	a, b, c, f	1.51 (3.74)	1.14 (3.22)	4.36 (7.76)	3.11 (3.57)*	6.40 (5.61)*
Prosocial peers T1	a, b, c	3.13 (.86)	3.19 (.84)	2.62 (.84)	2.78 (.86)	2.45 (.81)
Prosocial peers T2	a, b, c, e	3.03 (.88)	3.11 (.85)*	2.72 (.82)	2.55 (.87)*	2.27 (.87)*
Prosocial peers T3	a, b, c	3.09 (.91)	3.15 (.90)	2.58 (.86)	2.78 (.84)	2.36 (.86)
School commitment T1	b, c	3.86 (.69)	3.89 (.67)	3.72 (.66)	3.63 (.74)	3.40 (.72)
School commitment T2	a, b, c	3.73 (.72)	3.79 (.69)*	3.49 (.72)*	3.30 (.73)*	3.23 (.88)†
School commitment T3	c	3.65 (.81)	3.67 (.80)*	3.60 (1.03)	3.55 (.76)	3.33 (.93)
Guilt T1	a, b, c	2.66 (.45)	2.69 (.43)	2.44 (.56)	2.53 (.46)	2.37 (.49)
Guilt T2	a, b, c, e	2.61 (.47)	2.65 (.43)*	2.46 (.48)	2.27 (.56)*	2.15 (.57)*
Guilt T3	b, c	2.52 (.53)	2.55 (.52)*	2.33 (.57)	2.35 (.60)	2.20 (.45)
Neutralizations T1	a, b, c	3.31 (1.07)	3.29 (1.05)	3.90 (.87)	3.79 (1.00)	4.16 (.92)
Neutralizations T2	a, b, c	3.44 (1.10)	3.38 (1.09)*	4.04 (1.00)	4.19 (.81)*	4.42 (.77)*
Neutralizations T3	b, c	3.53 (1.06)	3.46 (1.06)*	3.88 (1.31)	3.96 (.81)	4.33 (.77)
Parental monitoring T1	b, c	4.01 (.80)	4.06 (.77)	3.88 (.80)	3.66 (.98)	3.65 (.93)
Parental monitoring T2	b, c	4.04 (.78)	4.09 (.76)	3.80 (.84)	3.71 (.86)	3.56 (.87)

Table 1. Continued

Variables	Post Hoc Tests[a]	Total Sample (N = 1,673)		Nongang (n = 1,492)		Gang Status Comparison Only Gang at T1 (n = 48)		Gang Onset at T2 (n = 76)		Gang at T1 and T2 (n = 57)	
Parental monitoring T3	c	4.13	(.79)	4.16	(.76)*	3.98	(1.01)	4.06	(.90)*	3.68	(.85)
Negative peer commitment T1	b, c, e, f	1.85	(.90)	1.79	(.86)	2.06	(.97)	2.16	(1.04)	2.63	(1.22)
Negative peer commitment T2	a, b, c, e	1.98	(.97)	1.89	(.91)*	2.25	(.89)	2.62	(1.11)*	3.05	(1.17)*
Negative peer commitment T3	b, c, e, f	2.04	(1.06)	1.95	(1.00)	2.13	(1.53)	2.48	(1.07)	3.39	(1.22)†
Unstructured socializing T1	b, c	1.28	(.84)	1.23	(.83)	1.50	(.84)	1.64	(.87)	1.93	(.76)
Unstructured socializing T2	b, c, e	1.32	(.91)	1.23	(.89)	1.56	(.76)	1.97	(.79)*	2.30	(.69)*
Unstructured socializing T3	b, c	1.32	(.90)	1.27	(.88)	1.68	(.99)	1.62	(.91)†	1.77	(.98)*
Delinquent peers T1	a, b, c, e, f	12%		9%		33%		23%		59%	
Delinquent peers T2	a, b, c, e, f	17%		12%*		34%		42%*		71%	
Delinquent peers T3	a,b,c	18%		15%†		44%		37%		55%	
Anger T1	a, b, c, f	3.02	(.96)	2.95	(.95)	3.64	(.87)	3.27	(.93)	3.72	(.93)
Anger T2	a, b, c	3.05	(1.00)	2.97	(.98)	3.58	(.86)	3.60	(.96)*	3.79	(.94)
Anger T3	a,b,c	3.00	(1.00)	2.94	(.99)	3.55	(1.08)	3.43	(.87)	3.49	(.85)†
Gang member at T3	a, b, c, e, f	8%		3%		21%		21%		51%	

NOTES: For dichotomous variables, figures represent percentages, whereas other figures represent means and (standard deviations). Column percentages may not total 100% due to rounding.
ABBREVIATIONS: T1 = time 1; T2 = time 2; T3 = time 3.
[a] Bonferonni post hoc tests ($p < .05$): a = nongang versus only gang T1; b = nongang versus gang onset T2; c = nongang versus gang T1 and T2; d = only gang T1 versus gang onset T2; e = only gang T1 versus gang T1 and T2; f = gang onset T2 versus gang T1 and T2.
† $p < .10$; * $p < .05$ paired sample t test of within-group differences between time x and time $x - 1$.

DEMOGRAPHIC CHARACTERISTICS

The demographic characteristics used in the present analyses include the following: sex, race/ethnicity, and age. For analysis purposes, the sex variable was dummy coded, with male equal to 1 and female equal to 0. Forty-six percent of our survey respondents were male, whereas females represented 54 percent of the total. Study participants were classified into one of the following racial/ethnic groups: non-Hispanic/White, Black/African American, Hispanic/Latino, and Other, with those reporting to be non-Hispanic/White serving as the reference group. Because of the concentration of participating schools in the southwestern United States, the largest racial/ethnic group was Hispanic (42 percent) followed by non-Hispanic/White (32 percent), Other (14 percent), and African American (12 percent). Finally, age was left in its original metric, with the mean age for the sample being 12.23 years (standard deviation [SD] = .97) at the time of the pretest (time 1).

DELINQUENCY

The delinquency index was created using the frequency score representing the number of times respondents engaged in the described behavior in the past 3 months. Available answers ranged in magnitude from 0 to 4, with 0 equal to never, 1 equal to one time, 2 equal to two to five times, 3 equal to six to ten times, and 4 equal to more than ten times. Questions used in the creation of the index were created specifically for this study, as well as adapted from those used as part of the Denver Youth Survey (Huizinga, Esbensen, and Weiher, 1991) and the National Youth Survey (Elliott, Huizinga, and Ageton, 1985). More specifically, the measure was created from ten items that ranged in seriousness from "stolen or tried to steal something worth less than $50" to "used a weapon or force to get money or things from people." All ten items were summed to create an overall frequency score.

PROSOCIAL PEERS

Associating with prosocial peers was measured with an eight-item scale in which students were asked, "During the last year, how many of your current friends have done the following?" Responses were based on a five-point scale ranging from "none of them" to "all of them." Items in the scale included "have been thought of as good students," "have gotten along well with teachers and adults at school," and "have been involved in school activities or school athletics" ($\alpha = .84$).

School Commitment

Commitment to school was measured with a seven-item scale. Students were asked whether they agreed or disagreed with several statements regarding school activities, including "I try hard in school," "in general, I like school," and "grades are very important to me." Responses were based on a five-point Likert-type scale ranging from "strongly disagree" to "strongly agree" ($\alpha = .79$).

Guilt

To measure the respondents' anticipated guilt related to participation in delinquent activities, we used a 13-item guilt scale.[5] The stimulus for the measure stated, "How guilty or how bad would you feel if you . . ." and was followed by statements ranging in severity from "skipped school without an excuse" to "used a weapon or force to get money or things from people." Responses were based on a three-point scale ranging from "not very guilty/bad" to "very guilty/bad" ($\alpha = .93$).

Neutralization

To measure the use of techniques of neutralization (Sykes and Matza, 1957), we relied on three questions related to the use of force, including "it's okay to beat up someone if they hit you first," "it's okay to beat up someone if you have to stand up for or protect your rights," and "it's okay to beat up someone if they are threatening to hurt your friends or family." Answers were collected using a five-point Likert-type scale, with one equal to "strongly disagree" and five equal to "strongly agree" ($\alpha = .78$).

Parental Monitoring

Parental monitoring was measured using a four-item scale scored on a five-point Likert-type scale (1 = "strongly disagree" and 5 = "strongly agree"). Statements included items such as "my parents know who I am with if I am not at home" and "my parents know where I am when I am not at home or at school" ($\alpha = .72$).

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5. Evidence suggests that anticipated emotions, particularly guilt, play a central role in the decision-making process. Baumeister et al. (2007) described this process by stating that "[g]uilt can exert a strong effect on behavior even if people rarely feel guilty, simply because people learn what will make them feel guilty and then change their behavior so as to avoid guilt." Anticipated guilt, therefore, is a better predictor of behavior than current guilt levels.

NEGATIVE PEER COMMITMENT

Commitment to deviant peers consists of three items measured on a five-point scale ranging from "not at all likely" to "very likely." The three questions included in the scale asked respondents the following question: "If your group of friends was getting you in trouble (at home/ at school/ with the police), how likely is it that you would still hang out with them?" ($\alpha = .80$).

UNSTRUCTURED SOCIALIZING

To measure the extent to which respondents were involved in unstructured socializing, including activities outside the purview of adult supervision, a three-question index (Esbensen et al., 2001) was used. Questions in the index asked respondents the following questions: "Do you ever spend time hanging around with your current friends, not doing anything in particular, where no adults are present"; "do you ever spend time getting together with your current friends where drugs and alcohol are available"; and "does this group spend a lot of time together in public places like the park, the street, shopping area, or the neighborhood?" Respondents indicated either "yes" (1) or "no" (0) for each question, and the index was created based on the sum of responses across items.

DELINQUENT PEERS

The measure tapping whether the respondents' peer group engaged in delinquent activities was derived from the Eurogang Youth Survey (Eurogang, 2005). To identify youth who belonged to a peer group that engages in delinquent behavior, subjects were asked, "Do people in your group actually do illegal things together?" Those who responded "yes" were coded 1, and those who responded "no" were coded 0.

ANGER IDENTITY

The survey instrument included the four-item scale developed by Grasmick et al. (1993) to measure the anger/temper component of the self-control construct, which is consistent with the operationalization of anger identity in Giordano, Schroeder, and Cernkovich (2007). Items in the scale included "I lose my temper pretty easily" and "when I'm really angry, other people better stay away from me." Responses ranged from one to five, with one equal to "strongly disagree" and five equal to "strongly agree" ($\alpha = .74$).

ANALYSIS STRATEGY

The primary concern of analyses that seek to determine the causal effect of a social state that cannot be manipulated through experimentation, such

as gang involvement, is the likely influence of nonrandom selection of people to that status (Sampson, Laub, and Wimer, 2006). Gang membership is a status that is likely influenced to some degree by the self-selection of individuals with antisocial tendencies into these groups (DeLisi et al., 2009; Haviland, Nagin, and Rosenbaum, 2007; Krohn and Thornberry, 2008). Given this possibility of self-selection into gangs, the long-standing notion that gangs influence delinquency above and beyond the influence of preexisting differences in antisocial tendencies between gang and nongang youth remains debatable, unless sources of confounding are adequately controlled.

The current study uses two mechanisms to handle the potential influence of confounding on the impact of gang membership on delinquency. First, to examine the direct effect of gang membership on delinquency and those processes related to "turning points" (Sampson and Laub, 2005), we use propensity score matching using the *psmatch2* module (Leuven and Sianesi, 2003) available in Stata 10.0 (Stata, 2007). The propensity score was derived using probit regression and represents the probability of becoming gang involved at time 2 given the observed characteristics at time 1.[6] Although the matching algorithm becomes less important with large samples, following the recommendations of Caliendo and Kopeinig (2008), all propensity score analyses were conducted using nearest neighbor one-to-one, nearest neighbor one-to-ten, kernel, and local linear regression procedures to gauge the robustness of study results. All of these analyses produced substantively similar results (results available upon request). The results reported in tables 2–4 are based on kernel matching to construct the comparison group, as this type of matching on the propensity score produces lower variance because more individuals in the control group are retained (Caliendo and Kopeinig, 2008). Kernel matching uses the weighted averages of those individuals in the control group to construct the counterfactual outcome, with those individuals in the control group with propensity scores further from individuals in the treatment group receiving less weight than control cases that more closely resemble those in the treatment group. A potential limitation of kernel matching is the possibility of retaining individuals in the control group that are substantially different than those in the treatment group. To account for this possibility, the Epanechnikov kernel-matching procedure was used, as it allows one to constrain matches to a specified difference in treatment propensity. All reported analyses are based on a bandwidth of .05. Statistical significance of the average treatment effect on the

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6.   Appendix A provides a description of the scales and indices used to create the propensity score. All time 1 measures of our proposed mediators, as described in the Measures section, were included in the calculation of the propensity score. A full description of all variables included in the model is available upon request.

Table 2. The Effect of Onset of Gang Membership at Time 2 on Contemporaneous and Lagged Social Controls and Behavior

	Unmatched[a]			Matched ATT[b]			
Variables	GangOnset (n = 69)	Nongang (n = 1,275)	Difference	GangOnset (n = 68)	Nongang (n = 1,274)	Difference	ATE
Time 2							
Delinquency frequency	5.52	1.32	4.20*	5.26	1.96	3.30*	3.27
Prosocial peers	2.59	3.11	−.52*	2.61	2.88	−.27*	−.35
School commitment	3.33	3.78	−.45*	3.35	3.63	−.28*	−.32
Guilt	2.29	2.64	−.35*	2.31	2.50	−.19*	−.23
Neutralizations	4.14	3.37	.77*	4.13	3.66	.47*	.56
Parental monitoring	3.75	4.02	−.27*	3.77	3.85	−.08	−.06
Negative peer commitment	2.62	1.94	.68*	2.59	2.15	.44*	.46
Unstructured socializing	1.96	1.24	.72*	1.94	1.45	.49*	.65
Delinquent peer group	.41	.13	.28*	.40	.22	.18*	.15
Anger identity	3.55	3.00	.55*	3.53	3.17	.36*	.51
Time 3							
Delinquency frequency	2.44	1.27	1.17*	2.45	1.95	.50	.51
Prosocial peers	2.65	3.11	−.46*	2.66	2.95	−.29*	−.20
School commitment	3.53	3.68	−.15	3.51	3.58	−.07	−.10
Guilt	2.38	2.53	−.15*	2.37	2.41	−.04	−.05
Neutralizations	3.89	3.48	.41*	3.89	3.64	.25*	.20
Parental monitoring	4.01	4.12	−.11	4.03	4.01	.02	.06
Negative peer commitment	2.51	1.96	.55*	2.47	2.08	.39*	.30
Unstructured socializing	1.62	1.27	.35*	1.61	1.46	.15	.15
Delinquent peer group	.35	.16	.19*	.35	.22	.13	.11
Anger identity	3.47	2.96	.51*	3.48	3.06	.42*	.44
Gang involvement	.22	.02	.20*	.22	.05	.17*	.16

NOTES: Propensity score analyses were done using kernel matching with a bandwidth of .05 and a caliper of .05. Bootstrap standard errors (50 replications) of the ATT were used to calculate statistical significance.

*ABBREVIATION*S: ATE = average treatment effect; ATT = average treatment effect on the treated.

[a]Difference scores represent the raw mean difference between nongang youth and those who reported onset of gang involvement at time 2.

[b]The ATT is based on the differences in mean outcome for propensity-score-matched individuals using kernel matching.

*p < .05 (t test).

treated (ATT) in table 2 was determined based on bootstrapped (50 replications) standard errors, as suggested by Caliendo and Kopeinig (2008).

Because the current analysis is also interested in the degree to which those factors associated with "turning points" (Sampson and Laub, 2005) can explain the association between gang membership and delinquency, we use the Preacher and Hayes (2008) technique for assessing direct and indirect effects in multiple mediator models.[7] This method of assessing mediation with multiple mediators has numerous advantages, including 1) the

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7. The dependent variable represents delinquency frequency and, as expected, is overdispersed (i.e., the variance is greater than the mean), which could lead to biased estimates if analyzed in an untransformed state using ordinary least-squares regression techniques (Osgood, 2000). The dependent variable in analyses using

ability to determine the unique effect of individual mediators, conditional on other mediators and covariates in the model;[8] 2) one can assess the relative magnitude of specific indirect effects in the model; and 3) the ability to include multiple mediators as well as covariate controls in a single model reduces the possibility of omitted variables bias. In the next section, we discuss our results related to the onset of and desistance from gang involvement separately. Specifically, we discuss the success of the balancing procedures, the direct impact of gang associations on delinquency frequency and the variables associated with turning points, as well as the ability of the turning point framework to explain the influence of gang involvement on delinquency.

RESULTS

ONSET OF GANG MEMBERSHIP

To determine whether the onset of gang membership is associated with an increase in delinquent involvement, a propensity score model comparing those who reported involvement in a gang for the first time at time 2 ($n = 69$)[9] with nongang youth ($n = 1,275$) (i.e., youth who did not report gang involvement at time 1 or time 2) was conducted (probit regression results; chi-square = 67.78, $p < .001$; pseudo $R^2 = .12$; available upon request; see appendix A for all variables included). The results of the initial test of selection bias revealed several preexisting differences between those who joined a gang and those who failed to do so (see appendix C). Specifically, 23 of the 34 time 1 variables used to match the time 2 gang joiners to the nongang youth were significantly different and suggested that the gang

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the Preacher and Hayes (2008) method represents the natural log of delinquency frequency plus one (skewness = .984).

8. When comparing the direct effect of gang involvement on mediators between the propensity score models and the multiple mediation models, "[i]t is important to remember that a specific indirect effect through a mediator (say, M_3) in the multiple mediation context is not the same as the indirect effect through M_3 alone, except in the unlikely circumstances that all other mediators are uncorrelated with M_3. The specific indirect effect through M_3 represents the ability of M_3 to mediate the effect of X on Y conditional on the inclusion of the other mediators in the model" (Preacher and Hayes, 2008: 881–2). Appendix B displays the degree of correlation of variables used in table 3.

9. The analysis sample consists only of 69 respondents who reported gang membership for the first time at time 2 instead of 76 as reported in table 1 because seven respondents failed to take the survey at time 1, and thus, we have no baseline covariate information. Similar discrepancies can be found between values in tables 1 and 4, and they are a result of the same problem of missing waves of data for certain respondents.

joiners were more at risk for delinquency and gang involvement before the onset of gang membership.[10] This finding suggests that failure to account properly for selection bias related to joining a gang could lead to inaccurate conclusions. After matching, however, no significant differences between the two groups remained (i.e., all standardized biases were below 20). Based on the estimated propensity to join a gang at time 2, two cases (i.e., 1 treatment and 1 control) could not be matched successfully and thus were dropped from the analyses. Given the success of our propensity score model in removing the initial bias between the two groups, the conditional independence assumption (also referred to as unconfoundedness and selection on observables) (Blundell and Costa Dias, 2009; Caliendo and Kopeinig, 2008) has been met, and the estimated outcomes can be attributed to gang joining. Thus, we turn next to a discussion of the results of our propensity score analyses.

The propensity score analysis presented in table 2 (and then again in table 4) contains three separate parameters of interest. The first set of analyses represents mean comparisons based on the unmatched sample with no kernel weights and shows the unweighted differences between nongang youth and those who joined a gang at time 2. The second set of analyses reports the sample means derived from the weighted sample such that the difference score represents the ATT. This comparison, therefore, is used to determine whether gang joining produced statistically significant differences in outcome after accounting for preexisting differences in gang involvement likelihood. The final column is the average treatment effect (ATE), which in the current context, represents the average estimated effect of gang involvement if respondents were randomly assigned to this social state.

The first research question to be examined is whether gang membership impacts involvement in delinquency above and beyond the influence of pre-existing differences between gang and nongang youth. As table 2 demonstrates, even after controlling for preexisting differences in the likelihood of gang involvement, gangs produced a statistically significant contemporaneous effect on delinquency for those youth who reported onset of gang involvement at time 2 (ATT = 3.30, $p < .05$). Although the unmatched group comparisons demonstrated both a contemporaneous (4.20, $p < .05$) and a lagged (1.17, $p < .05$) mean difference in delinquency for gang versus nongang youth, after controlling for propensity to join a gang at time 2, the lagged effect of joining a gang at time 2 on time 3 delinquency is no

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10. As suggested by Rosenbaum and Rubin (1985), covariate balance was examined using the standardized bias statistic. Absolute values greater than 20 represent imbalance (i.e., bias) between the treatment and control groups. Given the low variances produced through kernel matching, "even a small difference in the covariate means can create a sizable standardized bias" (Harding, 2003: 689).

longer significant, suggesting that the impact of gang involvement decays rather quickly in the current sample. Thus, gang involvement seems to have a direct effect on contemporaneous delinquent involvement.[11]

The second research question to be addressed is whether onset of gang involvement is consistent with the notion of a "turning point" as discussed by Sampson and Laub (2005). The results provided in table 2 suggest that the onset of gang membership impacts factors related to Sampson and Laub's (2005) discussion of turning points in both the short and the long term. After controlling for propensity to join a gang, those who became involved in a gang at time 2 reported significantly different mean values at time 2 on all measures associated with turning points except parental monitoring in the theoretically expected direction. Specifically, the onset of gang involvement was associated with fewer associations with prosocial peers (ATT $= -.27$, $p < .05$), lower school commitment (ATT $= -.28$, $p < .05$), and less anticipated guilt for involvement in delinquency (ATT $= -.19, p < .05$) as well as with greater acceptance of neutralizations (ATT $= .47, p < .05$), higher negative peer commitment (ATT $= .44, p < .05$), more unstructured socializing (ATT $= .49, p < .05$), involvement with delinquent peers (ATT $= .18, p < .05$), and a greater anger identity (ATT $= .36, p < .05$). By time 3, those youth who reported onset of gang involvement at time 2 continued to report fewer prosocial peers (ATT $= -.29, p < .05$) and a greater acceptance of techniques of neutralizations (ATT $= .25, p < .05$), higher negative peer commitment (ATT $= .39, p < .05$), and a greater anger identity (ATT $= .42, p < .05$). Overall, especially in the short term, onset of gang membership is consistent with Sampson and Laub's (2005) definition of a turning point. Given these findings, we next examine whether factors associated with gang involvement as a turning point can explain the higher levels of reported delinquency at time 2. The failure to find a lagged effect of gang involvement on delinquency at time 3 precludes the necessity of conducting mediation analyses on this outcome.

To examine the potential mediating processes associated with the influence of gang membership on delinquency, we use the Preacher and Hayes (2008) method of multiple mediation analysis using SPSS Statistical Software (16.0; SPSS Corporation, Chicago, IL, 2007). Table 3 presents results from this analysis, which included covariate controls for our demographic variables (i.e., sex, age, and race/ethnicity), the estimated propensity score for gang involvement (Coffman, 2011), and all time 1 values of our proposed mediators to control for potential confounding. That is, all coefficients represent the unique effect of the predictor on outcome above and beyond any

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11. Additional analyses examined the influence of onset of gang membership at time 3 on contemporaneous involvement in delinquency, as well as all mediating variables, with substantively similar results. These results are available upon request.

Table 3. The Total, Direct, and Indirect Effects of Onset of Gang Membership and Factors Associated with a Turning Point on Delinquency

Model A (a paths): The Effect of Onset of Gang Membership on Factors Associated with a Turning Point

	b	SE	t
Prosocial peers	−.24*	.09	−2.82
School commitment	−.24*	.08	−3.21
Guilt	−.18*	.05	−3.75
Neutralizations	.44*	.11	3.83
Parental monitoring	−.05	.10	−.59
Negative peer commitment	.39*	.11	3.58
Unstructured socializing	.46*	.10	4.71
Delinquent peer group	.17*	.04	4.00
Anger identity	.33*	.12	2.72

Model B (b paths): The Effect of Factors Associated with Turning Point on Delinquency

	b	SE	t	exp(b)
Prosocial peers	−.05	.02	−1.86	.95
School commitment	−.06*	.03	−2.21	.94
Guilt	−.28*	.05	−6.21	.76
Neutralizations	.10*	.02	5.12	1.11
Parental monitoring	.05*	.02	2.30	1.05
Negative peer commitment	.05*	.02	2.54	1.05
Unstructured socializing	.08*	.02	3.55	1.08
Delinquent peer group	.34*	.05	6.69	1.40
Anger identity	.08*	.02	3.54	1.08

Model C (c path): Total Effect of Onset of Gang Membership on Delinquency

	b	SE	t	exp(b)
Onset of gang membership	.60*	.08	7.44	1.82

Model D (c' path): Direct Effect of Onset of Gang Membership on Delinquency

	b	SE	t	exp(b)
Onset of gang membership	.35*	.07	4.74	1.42

Model E (ab paths): The Indirect Effects of Onset of Gang Membership on Delinquency

	b	SE	t	exp(b)
Total indirect effects	.25*	.04	5.72	1.29
Prosocial peers	.01	.01	1.41	1.01
School commitment	.02	.01	1.57	1.02
Guilt	.05*	.02	2.28	1.05
Neutralizations	.04*	.01	3.51	1.04
Parental monitoring	−.00	.01	−.56	1.00
Negative peer commitment	.02	.01	1.78	1.02
Unstructured socializing	.04*	.01	2.93	1.04
Delinquent peer group	.06*	.02	2.56	1.06
Anger identity	.02*	.01	2.30	1.02

NOTES: Estimates are based on the Preacher and Hayes (2008) method of effect decomposition, including bootstrap standard errors (1,000 replications) for indirect effects and covariate controls for gang propensity and time 1 constructs. The dependent variable represents the natural log of delinquency frequency plus one. $R^2 = .42$. $n = 1,344$.
ABBREVIATION: SE = standard error.
*p < .05.

other mediators or covariates in the model (Preacher and Hayes, 2008).[12] The effects of the covariate controls are not presented but are available upon request.

Model A in table 3 displays the effect of onset of gang membership on the proposed mediators. In comparing these results with those in table 2, a similar pattern emerges, although with slightly reduced effect sizes given the controls for all other variables in the model. Again, with the exception of parental monitoring, all variables associated with the turning point framework are significant and in the expected direction.

Model B in table 3 exhibits the effects of the mediators on the natural log of delinquency frequency net of all other mediators and covariate controls. With the exception of the prosocial peers and parental monitoring variables, all proposed mediators are significantly associated with delinquency and in the expected direction. Specifically, a one-unit increase in school commitment or guilt is associated with a 6 percent ($\exp(b) = .94$, $p < .05$) and a 24 percent ($\exp(b) = .76, p < .05$) reduction in delinquency frequency, respectively. Increases in the use of techniques of neutralization ($\exp(b) = 1.11, p < .05$), parental monitoring ($\exp(b) = 1.05, p < .05$), negative peer commitment ($\exp(b) = 1.05$, $p < .05$), unstructured socializing ($\exp(b) = 1.08, p < .05$), involvement with delinquent peers ($\exp(b) = 1.40$, $p < .05$), and anger identity ($\exp(b) = 1.08$, $p < .05$) also are systematically associated with increased delinquency frequency.

Overall, the onset of gang membership is associated with an 82 percent increase in delinquency frequency (see model C in table 3; $[\exp(b)] = 1.82, p < .05$). After controlling for the mediating pathways associated with the turning point framework, however, the direct effect is reduced to a 42 percent increase in delinquency that can be attributed to gang onset alone (see model D in table 3; $[\exp(b)] = 1.42, p < .05$). This reduced effect can be attributed to a significant total indirect effect of gang membership on delinquency through the mediating pathways (see model E in table 3; $[\exp(b)] = 1.29, p < .05$). In particular, five of the hypothesized mediating pathways are significant mediators of the effect of gang membership on delinquency, including guilt ($b = .05, p < .05$), neutralizations ($b = .04, p < .05$), unstructured socializing ($b = .04, p < .05$), delinquent peers ($b = .06$, $p < .05$), and anger identity ($b = .02, p < .05$).

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12. Given the inclusion of time 1 measures of our time 2 mediator variables as covariates in the model, a strong possibility existed that collinearity could be a problem. Examination of variance inflation factor (VIF) scores, reported in appendix B, suggests that the analyses are not seriously influenced by collinearity in the model.

DESISTANCE FROM GANG INVOLVEMENT

To examine the influence of desistance from gang involvement on delinquency and those processes related to turning points, a propensity score model comparing those individuals who ceased to associate with a gang at time 2 ($n = 34$) with those who reported persistent gang involvement at times 1 and 2 ($n = 52$) was conducted (probit regression results; $\chi^2 = 43.21$, $p > .05$, pseudo-$R^2 = .37$). Tests of unadjusted and adjusted bias, shown in appendix D, reveal several preexisting differences between gang desisters and gang persisters. Of the 34 time 1 covariates entered into the model, 14 have percent bias statistics above 20 and thus are unacceptably large. After adjusting for the propensity to leave a gang, however, 17 significant differences are found, with a loss of 29 (34 percent) respondents because of uncommon support. That is, 13 (38 percent) observations from the group of gang desisters and 16 (31 percent) observed gang persisters were dropped from the analysis because of extreme propensity scores.[13] Unfortunately, this loss of sample size reduced our statistical power below .80 (i.e., power = .53), which diminishes the ability to detect significant differences and does not allow for the calculation of bootstrap standard errors as suggested by Caliendo and Kopeinig (2008). The overall rate of respondent loss because of uncommon support suggests that gang persisters and desisters were not similar on several risk factors. Interestingly, however, although the unmatched sample comparisons suggest that gang persisters are more at risk for delinquent behavior and gang involvement, the matched sample comparisons suggest that those desisters who were retained in the analysis were more antisocial, on average, than the group reporting persistent gang involvement. That is, although 7 unmatched pretreatment covariates suggested that the persisters were more at-risk for antisocial behavior, 14 of the matched covariate comparisons suggest that the desisters were more prone to antisocial conduct, including delinquency. The kernel weighting procedure resulted in overadjustment for covariate confounding, and thus, the unconfoundedness assumption was not met.

The results of the unmatched sample comparisons, shown in table 4, suggest that gang desistance is associated with a contemporaneous reduction in delinquency frequency (mean difference = -4.70, $p < .05$), negative peer commitment (mean difference = $-.72$, $p < .05$), unstructured socializing (mean difference = $-.89$, $p < .05$), and delinquent peer associations (mean

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13. As might be expected given the significant differences between the two groups before matching, the 13 gang desisters who were dropped from the analysis had extremely high predicted probabilities of leaving the gang at time 2 (mean = .91) compared with the gang persisters who were dropped from the analysis (mean = .04).

Table 4. The Effect of Leaving the Gang at Time 2 on Contemporaneous and Lagged Social Controls and Behavior

Variables	Unmatched[a]			Matched ATT[b]			
	Desisters (n = 34)	Persisters (n = 52)	Difference	Desisters (n = 21)	Persisters (n = 36)	Difference	ATE
Time 2							
Delinquency frequency	3.74	8.44	−4.70*	4.67	7.71	−3.04	−3.08
Prosocial peers	2.68	2.28	.40*	2.57	2.55	.02	.42
School commitment	3.41	3.33	.08	3.33	3.46	−.13	.17
Guilt	2.41	2.18	.23	2.39	2.27	.12	.19
Neutralizations	4.07	4.38	−.31	4.17	4.23	−.06	−.20
Parental monitoring	3.83	3.60	.23	3.75	3.59	.16	.29
Negative peer commitment	2.25	2.97	−.72*	2.48	2.56	−.08	−.43
Unstructured socializing	1.38	2.27	−.89*	1.48	2.24	−.76	−.71
Delinquent peer group	.37	.66	−.29*	.45	.74	−.29	−.31
Anger identity	3.54	3.74	−.20	3.54	3.79	−.25	−.28
Time 3							
Delinquency frequency	3.88	5.10	−1.22	4.11	2.71	1.40	−.17
Prosocial peers	2.73	2.36	.37	2.79	2.83	−.04	.41
School commitment	3.88	3.29	.59*	3.85	3.41	.44	.89
Guilt	2.39	2.23	.16	2.35	2.20	.15	.33
Neutralizations	3.78	4.19	−.41	3.85	3.96	−.11	−.52
Parental monitoring	3.94	3.61	.33	3.83	3.83	.00	.60
Negative peer commitment	1.95	3.35	−1.40*	1.97	3.15	−1.18	−1.70
Unstructured socializing	1.80	1.78	.02	2.20	1.41	.79	.41
Delinquent peer group	.41	.53	−.12	.49	.54	−.05	.04
Anger identity	3.54	3.47	.07	3.40	3.51	−.11	−.22
Gang involvement	.24	.48	−.24*	.19	.23	−.04	−.01

NOTES: Propensity score analyses were done using kernel matching with a bandwidth of .05. Interpretation of these results should be made with caution, however, as the small number of cases resulted in an underpowered analysis sample (i.e., power = .53 for delinquency frequency, which is less than the requisite .80), which resulted in the inability to estimate bootstrap standard errors to calculate statistical significance.
ABBREVIATIONS: ATE = average treatment effect; ATT = average treatment effect on the treated.
[a]Scores represent the raw mean difference between youth who desisted from gang involvement and those who persisted at time 2.
[b]The ATT is based on the differences in mean outcome for propensity–score-matched individuals using kernel matching.
*$p < .05$ (t test).

difference = −.29, $p < .05$). Furthermore, the unmatched mean comparisons also suggest a lagged impact of gang desistance on school commitment (mean difference = .59, $p < .05$) and negative peer commitment (mean difference = −1.40, $p < .05$) at time 3.

After controlling for preexisting differences in the propensity to leave a gang, however, all unweighted differences are reduced to nonsignificance. Given the low power to detect systematic differences, however, and the general paucity of work on gang desistance more generally, we proceed by exploring the pattern of effects observed in the matched sample comparisons. The overall pattern of effects seems consistent with Sampson

and Laub's (2005) discussion of the mechanisms associated with a turning point, as gang desistance is associated with what could be considered a substantive, although not significant, change in delinquency (ATT $= -3.04$, ATE $= -3.08$). Furthermore, all contemporaneous and lagged ATE scores are in the theoretically predicted direction, with the exception of the lagged effects of gang desistance on unstructured socialization (ATE $= .41$) and involvement with delinquent peers (ATE $= .04$).

DISCUSSION AND CONCLUSION

At the outset of this article, we posed the following research questions:

1. What is the effect of gang involvement on delinquency after controlling for potential selection effects?
2. Is the onset of and desistance from gang involvement related to changes in levels of social control consistent with the concept of a turning point?
3. Do factors associated with the turning point framework mediate the effect of gang membership on self-reported delinquency?

Our analyses of panel data allow for us to draw the following conclusions: 1) After controlling for preexisting differences between nongang and gang youth, the onset of gang membership exerts an independent effect on delinquency; 2) gang joining is associated with a significant reduction in informal social controls; and 3) factors associated with the turning point framework partially mediate the effect of the onset of gang membership on delinquency. Although we cannot make any strong conclusions on the applicability of Sampson and Laub's (2005) turning point framework to the gang desistance process, because of low sample size, the overall pattern of estimated average treatment effects suggests that this conceptual model might prove fruitful in explaining this process in future studies of desistance from gangs. Taken as a whole, these findings begin to highlight the group processes discussed by Klein and Maxson (2006) as the key differentiating factor between youth groups and youth gangs.

Another important finding of the current study is the non-negligible role of self-selection into and out of gangs. Consistent with the enhancement model, current results suggest that at-risk youth are more likely to join gangs than more prosocial youth. Conversely, relatively prosocial youth are more likely to self-select out of these groups. The loss of roughly one third of our sample in analyses of the desistance process provides strong evidence of risk heterogeneity among gang members. This finding might help explain the substantial body of literature that has documented the rather transient nature of gang involvement, with most youth gang careers lasting 1 year or less (Esbensen and Huizinga, 1993; Hill, Lui, and Hawkins, 2004; Peterson,

Taylor, and Esbensen, 2004; Thornberry et al., 2003). Given our reliance on observational, nonexperimental data to study the consequences of gang membership, the failure to control for such differences could lead to significant confounding and, thus, to biased estimated effects related to gang membership. Future research on gangs should explore such issues when estimating effects associated with gang membership.

Although this study provides strong suggestive evidence that youth who join gangs experience significant changes in their emotions, attitudes, and behavior, it highlights the necessity of continuing to study the gang desistance process. Given the work of Thornberry et al. (2003), who found that gang membership in adolescence was related to numerous negative life events in early adulthood, such as being arrested, dropping out of school, teenage parenthood, and unstable employment, more systematic research on the consequences of gang membership is needed. Future research should examine the desistance process with larger samples and with different lag times than those used in the current study to understand better why even short-term gang involvement can have such long-lasting consequences.

An advantage of using Sampson and Laub's (2005) life-course perspective of criminal development is the policy relevance of the findings. In the current study, in particular, this framework underscores the necessity of primary prevention and suggests potential avenues for intervention in the lives of gang-involved youth. As for primary prevention, current results suggest that gang involvement has immediate effects not only on delinquent involvement but also negatively effects sources of social capital that can impact long-term developmental trajectories. The prevention of gang involvement, therefore, can have long-term benefits above and beyond the immediate impact on criminal involvement. For youth involved in gangs, however, the current results suggest that merely getting youth out of gangs might not be enough to curtail the immediate or long-term consequences of their involvement and suggest that intervention programs also should focus on the restoration of social bonds with conventional others. That is, gang interventions might be most effective if they provide youth with avenues to build on sources of social capital, such as improved relationships with prosocial peer networks, school officials, and their families.[14] Interventions also should work on identity reorientation, given the importance of identity

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14. Although gang membership did not produce a significant change in parental monitoring, table 1 and appendices C and D suggest that gang members reported less parental monitoring than nongang youth. It is likely that parental monitoring, or the lack thereof, was associated with gang member status in the first place, and thus, family interventions might produce a positive impact on gang membership and antisocial behavior. For instance, although not impacted by gang onset, table 3 suggests that parental monitoring is significantly associated with delinquency. This finding is consistent with research that suggests that family problems are a reason

in adolescent development (Giordano, Schroeder, and Cernkovich, 2007) and the likely impact gang membership has on individual self-concepts.

The current study has several limitations (e.g., relatively young respondents and purposive school-based sample conducted primarily in the southwestern United States, with a large Hispanic composition) that preclude generalizations to the youth population as a whole. Unlike other panel studies, however, that have relied on single-site samples with limited racial and ethnic diversity, this study includes multiple sites, participants from several races and ethnicities, and a wide age range in participants. Similar to other panel studies, attrition is a possible source of bias. Another caveat concerns temporal ordering; given the data-collection procedures, one could question the temporal ordering of the key concepts under study. Specifically, because our measure of delinquency is based on an interval (i.e., prior 3 months), whereas our attitudinal and gang measures are contemporaneous to data collection, we cannot rule out the possibility that gang membership was the effect of changes in these constructs. Future research that can overcome this limitation should explore these issues of temporal order. In the end, however, respondents included in the current study who reported onset of gang membership between waves of data collection reported substantial changes in attitudes, emotions, and behaviors consistent with Sampson and Laub's (2005) theoretical framework.

Finally, although propensity score analyses can help to produce comparable groups in observational studies, they are only as effective as the observed covariates used to match the groups under study. Random assignment of treatments can be used to balance groups on both observed and unobserved covariates, but propensity score analyses cannot account for the possibility of confoundedness on unobserved factors. Even though the current study included numerous time 1 covariates on which to balance gang and nongang youth, the possibility still exists that an unobserved variable confounds the relationship between treatment and outcome. Future research should seek to use additional covariates to determine more precisely the sources of selection into and out of gangs.

In conclusion, although prior research has suggested that the social environment associated with youth gang membership impacts attitudes, emotions, and ultimately delinquency, the current study documented this dynamic process by including information on youth before, during, and after membership in such groups. The results suggest that gang membership impacts attitudes, emotions, and behavior in a manner consistent with Sampson and Laub's (2005) turning point framework. That is, the four important elements of turning points were impacted by gang membership and,

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for gang involvement (see, e.g., Miller, 2001). We thank an anonymous reviewer for this insight.

in turn, significantly mediated the association between gang membership and delinquency. Future research should explore gang membership from a developmental perspective and include more refined measures of important social bonds and the social-psychological processes associated with gang membership and delinquency.

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Appendix A. Description of Variables and Scales Used to Create the Propensity Scores

Scales/Indices	Example Question(s)	Number of Items	Response Range	Alpha
Community disorder	"Run down or poorly kept buildings in the neighborhood," "Graffiti on buildings and fences in the neighborhood"	15	1–3	.90
Fear of victimization	"Being robbed or mugged," "Being attacked by someone with a weapon," "Being attacked or threatened at school"	8	1–5	.90
Impulsivity	"I often act on the spur of the moment," "I don't devote much thought and effort to preparing for the future"	4	1–5	.56
Risk taking	"I like to test myself every now and then by doing some- thing a little risky"	4	1–5	.75
Self-centeredness	"I try to look out for myself first, even if it means making things difficult for other people"	4	1–5	.70
Commitment to prosocial peers	"If your friends told you not to do something because it was wrong, how likely is it that you would listen to them?"	2	1–5	.73
Aggressive conflict resolution	"During the past year when you've gotten upset with some- one, how often have you done the following? . . . Hit the person"	2	1–3	.65
Cultural rejection	"I'll never have as much opportunity to succeed as young people from other neighborhoods"	8	1–5	.58
Self-esteem	"I am a useful person to have around," "I feel that I can't do anything right," "I feel good about myself"	10	1–5	.82
Perceived risk of victimization	"Being robbed or mugged," "Being attacked by someone with a weapon," "Being attacked or threatened at school"	8	1–5	.90
Collective efficacy	"Young people take an active role in my neighborhood," "Adults in my neighborhood encourage young people to get involved in community activities"	6	1–5	.66
Awareness of victim services	"You are aware of programs and services in your community that help victims of crime"	4	1–5	.70
Self-efficacy	"There's not much I can do to change our community"	4	1–5	.70
Perceived school safety	"I feel like nothing can hurt me when I am at school," "A lot of time, I feel like I have to 'watch my back' when I am at school"	4	1–5	.70

Appendix A. Continued

Scales/Indices	Example Question(s)	Number of Items	Response Range	Alpha
Reporting likelihood	"How likely is it that you would report the following events if you saw someone doing the following things? . . . Stealing something from a store, Bullying another student at school"	6	1–5	.89
Gangs in city	"Are there any gangs in your neighborhood or city?"	1	1–2	NA
Involvement in conventional activities	"During the past year, were you involved in the following activities? . . . School Activities or athletics, Job activities . . ."	5	1–2	NA
Empathy	"I would feel sorry for a lonely stranger in a group," "I worry about how other people feel"	4	1–2	NA

NOTE: Scale alphas are not reported for "Gangs in city," "Involvement in conventional activities," and "Empathy" as these are indexes that consist of dichotomous variables. All time 1 measures of the proposed mediators also were included in the probit model but are described in the Measures section of the text.
ABBREVIATION: NA = not applicable.

Appendix B. Bivariate Correlations of Time 2 Variables

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17
V1	1.000																
V2	.032	1.000															
V3	−.060*	.067*	1.000														
V4	.068*	−.026	−.253*	1.000													
V5	.020	−.031	−.582*	−.295*	1.000												
V6	−.008	−.023	−.281*	−.151*	−.358*	1.000											
V7	.063*	.045*	−.047*	.075*	.019	−.029	1.000										
V8	.067*	.381*	.155*	−.066*	.058*	.007	.024	1.000									
V9	−.065*	−.172*	−.062*	.183*	.017	−.149*	−.050*	−.306*	1.000								
V10	−.058*	−.130*	−.146*	−.026	.077*	−.013	−.017	−.323*	.451*	1.000							
V11	−.053*	−.188*	−.157*	.058*	−.014	−.018	−.039*	−.475*	.387*	.453*	1.000						
V12	.092*	.167*	.208*	−.129*	.138*	.031	.003	.388*	−.317*	−.330*	−.385*	1.000					
V13	−.035	−.080*	−.167*	.075*	.053*	−.053*	−.073*	−.143*	.240*	.303*	.229*	−.120*	1.000				
V14	.043*	.196*	.070*	−.035	−.060*	.027	.063*	.385*	−.386*	−.440*	−.441*	.340*	−.381*	1.000			
V15	.041*	.211*	−.008	.027	.059*	−.075*	.017	.347*	−.201*	−.240*	−.298*	.317*	−.108*	.325*	1.000		
V16	.080*	.274*	.068*	−.065*	.011	.031	.033	.470*	−.292*	−.269*	−.419*	.287*	−.156*	.361*	.370*	1.000	
V17	.066*	.103*	.075*	−.082*	.071*	.004	.039*	.256*	−.206*	−.192*	−.199*	.351*	−.474*	.374*	.175*	.179*	1.000
VIF	NA	1.160	NA	1.550	1.490	1.280	1.230	NA	1.860	1.950	1.690	1.730	1.530	1.700	1.460	1.300	1.650

ABBREVIATIONS: V1 = gang member onset at time 2; V2 = male; V3 = White; V4 = Black; V5 = Hispanic; V6 = other race/ethnicity; V7 = age; V8 = delinquency frequency; V9 = prosocial peers; V10 = school commitment; V11 = guilt; V12 = neutralizations; V13 = parental monitoring; V14 = negative peer commitment; V15 = unstructured socializing; V16 = delinquent peers; V17 = anger identity; VIF = variance inflation factor score for variables in table 3 given controls for corresponding time 1 constructs.

* $p < .05$.

Appendix C. Bias Diagnostics for Onset of Gang Membership at Wave II Versus Nongang Youth

	Unmatched			Matched		
Time 1 Variables	Gang Onset (n = 69)	Nongang (n = 1,275)	Percent Bias	Gang Onset (n = 68)	Nongang (n = 1,274)	Percent Bias
Male	**.55**	**.45**	**20.1**	.56	.52	8.3
Race						
Black	**.23**	**.11**	**33.0**	.24	.20	9.9
Hispanic	.43	.42	3.1	.44	.44	−.2
Other	.13	.13	−1.1	.12	.13	−3.4
Age	**12.55**	**12.20**	**34.8**	12.54	12.49	5.6
Gangs in city	**1.12**	**1.29**	**−27.2**	1.12	1.14	−2.8
Community disorder	**1.95**	**1.82**	**27.7**	1.95	1.92	7.1
Fear of victimization	2.83	3.02	−18.6	2.84	2.89	−5.0
Impulsivity	**2.95**	**2.78**	**21.4**	2.93	2.87	7.2
Risk taking	**3.06**	**2.66**	**44.4**	3.05	2.99	7.1
Self-centeredness	**2.55**	**2.30**	**30.6**	2.54	2.50	4.8
Commitment to prosocial peers	**3.99**	**4.29**	**−28.6**	4.02	4.06	−4.0
Aggressive conflict resolution	**1.96**	**1.77**	**33.3**	1.95	1.92	5.5
Cultural rejection	2.45	2.36	15.2	2.44	2.42	4.0
Self-esteem	3.74	3.85	−15.0	3.76	3.77	−.9
Perceived risk of victimization	2.31	2.18	13.9	2.31	2.30	1.2
Conventional activities	2.65	2.63	2.0	2.65	2.65	−.1
Collective efficacy	3.10	3.19	−14.8	3.09	3.13	−6.5
Empathy	**1.58**	**1.61**	**−49.6**	1.59	1.61	−5.7
Awareness of services	3.58	3.65	−9.6	3.59	3.61	−3.5
Self-efficacy	3.59	3.68	−13.8	3.60	3.62	−2.7
Perceived school safety	2.97	2.88	10.6	2.96	2.96	.1
Reporting likelihood	**2.73**	**3.20**	**−40.2**	2.74	2.80	−4.6
Guilt	**2.53**	**2.69**	**−36.5**	2.55	2.57	−5.1
Anger identity	**3.27**	**2.95**	**32.7**	3.25	3.20	5.1
Neutralizations	**3.77**	**3.27**	**48.5**	3.76	3.70	5.8
Negative peer commitment	**2.12**	**1.82**	**30.2**	2.10	2.04	6.0
Parental monitoring	**3.74**	**4.05**	**−35.3**	3.75	3.80	−6.2
School commitment	**3.62**	**3.89**	**−37.1**	3.64	3.69	−7.5
Prosocial peers	**2.82**	**3.20**	**−45.0**	2.83	2.88	−6.1
Unstructured socializing	**1.68**	**1.21**	**57.7**	1.66	1.57	11.7
Peer approval of delinquency	**.23**	**.12**	**30.5**	.22	.20	6.1
Delinquent peer group	**.23**	**.11**	**31.7**	.22	.21	4.8
Delinquency frequency	**2.39**	**1.00**	**44.1**	2.07	1.85	7.0

NOTE: Rubin and Rosenbaum (1985) suggested that percent bias values above 20 in absolute value indicates an unacceptable level of bias in the sample. Variables above 20 in absolute value are in **bold.**

Appendix D.   Bias Diagnostics for Gang Desistence at Wave 2 Versus Gang Persisters

	Unmatched			Matched		
Time 1 Variables	Desisters (*n* = 34)	Persisters (*n* = 52)	Percent Bias	Desisters (*n* = 21)	Persisters (*n* = 36)	Percent Bias
Male	.62	.60	4.3	.62	.55	13.7
Race						
Black	**.06**	**.19**	**−40.7**	**.10**	**.21**	**−34.7**
Hispanic	**.50**	**.33**	**35.3**	.52	.43	19.2
Other	**.24**	**.33**	**−20.2**	.29	.22	14.5
Age	12.15	12.19	−4.7	12.38	12.22	17.2
Gangs in city	1.15	1.10	9.2	1.05	1.13	−15.4
Community disorder	2.02	2.00	5.3	**2.02**	**2.14**	**−26.3**
Fear of victimization	2.86	2.80	5.5	2.89	2.91	−1.7
Impulsivity	2.97	2.95	3.1	**3.06**	**2.80**	**34.0**
Risk taking	**3.03**	**3.23**	**−22.1**	**3.30**	**3.02**	**29.9**
Self-centeredness	2.82	2.77	5.6	2.86	2.82	3.7
Commitment to prosocial peers	3.71	3.91	−16.3	3.95	4.20	−19.4
Aggressive conflict resolution	2.08	2.09	−1.9	2.05	2.02	4.5
Cultural rejection	2.59	2.52	13.4	**2.54**	**2.65**	**−21.0**
Self-esteem	3.63	3.74	−17.9	3.56	3.65	−14.1
Perceived risk of victimization	2.34	2.33	1.1	**2.38**	**2.11**	**26.0**
Conventional activities	**2.47**	**2.79**	**−24.0**	2.48	2.60	−9.5
Collective efficacy	3.08	3.05	6.3	3.10	3.20	−18.0
Empathy	1.58	1.53	14.5	1.58	1.59	−1.2
Awareness of services	3.54	3.69	−18.7	**3.61**	**3.87**	**−32.3**
Self-efficacy	**3.50**	**3.76**	**−41.4**	3.64	3.56	10.1
Perceived school safety	**3.17**	**3.38**	**−28.0**	3.16	3.39	−29.5
Reporting likelihood	**2.86**	**2.60**	**23.6**	2.84	2.92	−7.1
Guilt	2.34	2.38	−6.0	**2.38**	**2.56**	**−32.5**
Anger identity	3.50	3.67	−19.3	3.45	3.22	25.5
Neutralizations	**3.78**	**4.11**	**−35.6**	3.92	3.60	35.3
Negative peer commitment	**2.11**	**2.59**	**−42.3**	2.35	2.30	4.0
Parental monitoring	3.87	3.71	17.2	**3.85**	**4.10**	**−28.1**
School commitment	**3.66**	**3.46**	**29.8**	3.52	3.66	−21.1
Prosocial peers	**2.68**	**2.51**	**21.6**	2.44	2.81	−47.9
Unstructured socializing	**1.50**	**1.94**	**−54.7**	1.86	1.82	4.4
Peer approval of delinquency	.41	.43	−4.1	**.38**	**.27**	**22.0**
Delinquent peer group	**.38**	**.56**	**−36.7**	**.42**	**.31**	**21.6**
Delinquency frequency	**4.12**	**6.12**	**−29.8**	5.38	3.80	23.6

NOTE: Rubin and Rosenbaum (1985) suggested that percent bias values above 20 in absolute value indicates an unacceptable level of bias in the sample. Variables above 20 in absolute value are in **bold.**